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(54) **EPITAXIAL WAFER WITH FORMATION LAYER OF ELECTRODE FOR FET**

(57) Abstract:

PURPOSE: To enhance the evenness of carrier concentration while reducing the autodoping for improving the reproducibility of manufacture by a method wherein, after formation of a high purity GaAs buffer layer as the first layer, a GaAs active layer as the second layer is formed by doping sulfur and then a GaAs electrode formation layer as the third layer is formed by doping silicon.

CONSTITUTION: A GaAs buffer layer or an AlGaAs

buffer layer or the GaAs buffer layer and the AlGaAs buffer layer on the GaAs buffer layer as the first layer; an active layer in carrier concentration of $1-5 \times 10^{17} \text{cm}^{-3}$ specified by doping S as the second layer, and an electrode formation layer in carrier concentration exceeding $8 \times 10^{17} \text{cm}^{-3}$ specified by doping Si as the third layer on the second layer are formed on a GaAs substrate. Through these procedures, the evenness of carrier concentration of an active layer can be enhanced by doping S while the electrode resistance of electrode formation layer can be lowered by doping Si.

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